

Application No. 10/731,560
Reply to Office Action of October 11, 2006

Docket No.: 65783-0035

REMARKS

Claims 1-7, 9-26, 35 and 36 are pending. The Examiner has rejected claims 1-7 and 9-12 under 35 U.S.C. §103(a) as being unpatentable over Stoll et al. (U.S. Patent No. 4,925,156) in view of Yoshimura (U.S. Patent No. 6,019,461) and in further view of either Briedis et al (U.S. Patent No. 5,510,951) or Hansen et al. (U.S. Patent No. 5,910,890). In addition, the Examiner has rejected claims 13-26 under 35 U.S.C. §103(a) as being unpatentable over Hansen in view of Sasaki (JP 58005438) and claim 35 under 35 U.S.C. §103(a) as being unpatentable over Hansen and Sasaki in further view of Bartsch (U.S. Patent No. 5,687,050). Applicant thanks the Examiner for indicating that claim 36 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, Applicant has amended claim 35 to include the limitations of claims 13, 16 and 19. No new matter has been added. Applicant respectfully requests reconsideration of the pending claims in view of the above amendment and the following remarks.

Claim Rejections Under 35 U.S.C. §103

Claims 1-7 and 9-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Stoll in view of Yoshimura, and in further view of either Briedis or Hansen. These rejections are respectively traversed.

Independent Claim 1

Independent claim 1 is directed to a circuit for driving a coil-armature device that includes "a pulse width modulation signal generator including an inverter and a feed-back loop configured to generate an input signal to said inverter based upon an output signal of said inverter." Applicant

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respectfully submits that none of the cited references, either alone or in combination, teach or suggest “a pulse width modulation signal generator including an inverter and a feed-back loop configured to generate an input signal to said inverter based upon an output signal of said inverter,” as required by independent claim 1.

In the Office Action (page 3), the Examiner concedes that Stoll “does not teach that the signal generator includes an inverter and a feed-back loop configured to generate an input signal to said inverter based upon an output signal of the inverter.” Instead, the Examiner looks to Yoshimura to cure this deficiency. Applicant respectfully disagrees and submits that the Examiner has misconstrued the teachings of Yoshimura.

Yoshimura discloses a serial printer in which print operation is performed by using the ink supplied from an ink cartridge attached to the printer. (Yoshimura, col. 1, lines 5-8). The body of the serial printer in Yoshimura includes,

an inverting amplifier 22 (hereinafter referred to as inverter 22), feedback resistor 23 through which the output of the inverter 22 is fed back to the input of the inverter 22, F/V converter 24 that receives the output of the inverter 22, and A/D converter 25 that receives the output of the F/V converter 24. (Yoshimura, col. 4, lines 57-62).

In other words, Yoshimura teaches, at most, that “feedback resistor 23, capacitor 27, and inverter 22 form an oscillator 28 having a frequency determined by the electrical characteristics of these circuit elements.” *emphasis added*. (Yoshimura, col. 4, line 67- col. 5, line 3). Applicant concedes that the oscillator of Yoshimura is a signal generator having an inverter and a feed back loop, however, there is no portion of Yoshimura that teaches an inverter and a feed-back loop included into a pulse width modulation signal generator, as required by independent claim 1. Indeed, Yoshimura never contemplates pulse width modulation. Therefore, Yoshimura cannot possibly teach or suggest “a

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pulse width modulation signal generator including an inverter and a feed-back loop configured to generate an input signal to said inverter based upon an output signal of said inverter," as required by independent claim 1. For at least this reason, independent claim 1 and dependent claims 2-7 and 9-12 are patentable over the cited art and in condition for allowance.

Claims 13-26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hansen in view of Sasaki. In addition, claim 35 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hansen and Sasaki in further view of Bartsch. These rejections are respectfully traversed.

Independent Claim 13

Independent claim 13 is directed to a circuit for driving a coil-armature device, comprising:

a first switch configured to selectively activate the circuit;
a second switch, responsive to a control signal, that causes a driving voltage source to periodically energize the coil-armature device according to one of a first duty cycle and a second duty cycle; and
an analog switch, responsive to a change mode signal, that causes a transition from said first duty cycle to said second duty cycle.

The references cited by the Examiner do not teach or suggest "an analog switch, responsive to a change mode signal, that causes a transition from said first duty cycle to said second duty cycle," as required by independent claim 13.

In the Office Action (page 8), the Examiner concedes that Hansen et al. "does not teach an analog switch, responsive to a change mode signal, that causes a transition from a first duty signal to said second duty cycle." Rather, the Examiner relies on the Sasaki reference to allegedly teach an analog switch "responsive to a change mode signal received from a comparator (4c)." Applicant respectfully disagrees.

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First, Sasaki does not teach an analog switch “responsive to a change mode signal, that causes a transition from a first duty signal to said second duty cycle.” Rather, Sasaki teaches a fuel controller that includes a comparator that turns on and off the switches of an analog switch. The differentiated voltage that results is fed into a fuel arithmetic unit that calculates a fuel increase based on the rate of speed change in the engine. (Sasaki, Purpose and Constitution). In other words, the analog switch in Sasaki is responsive to a continuously changing “voltage in accordance with a change rate of speed,” not a “change mode signal, that causes a transition from a first duty signal to said second duty cycle,” as required by claim 13. Therefore, for at least this reason, independent claim 13 and dependent claims 14-26 and 35, which depend from claim 13, are allowable over the cited prior art and in condition for allowance.

In addition, however, although the Examiner concedes that Hansen et al. “does not teach an analog switch, responsive to a change mode signal, that causes a transition from a first duty signal to said second duty cycle,” the Examiner has not even alleged that the analog switch of Sasaki “causes a transition from a first duty signal to said second duty cycle”. Therefore, Applicant respectfully submits that the Examiner has not established a prima facie case of obviousness under §103. For this additional reason, independent claim 13 and dependent claims 14-26 and 35 are allowable over the cited art and in condition for allowance.

CONCLUSION

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and such action towards these ends is respectfully requested.

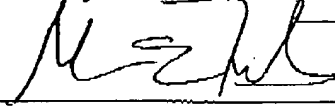
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Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. 65783-0035 from which the undersigned is authorized to draw.

Dated: January 11, 2007

Respectfully submitted,

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